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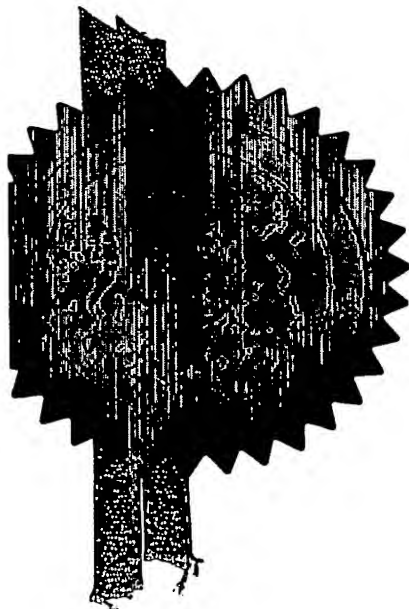
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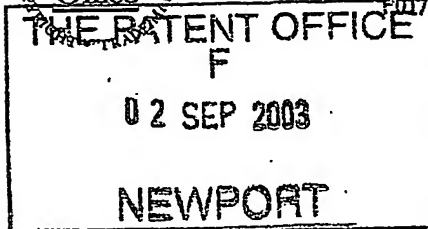
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2. Patent application number (The Patent Office will fill in this part)	0320533.3		02 SEP 2003
3. Full name, address and postcode of the or of each applicant (underline all surnames)	Mediseal Ltd 38B Church Lane Wingfield Trowbridge, Wiltshire BS14 9LW 870527 9001 England		
Patents ADP number (if you know it)			
If the applicant is a corporate body, give the country/state of its incorporation	England		
4. Title of the invention	Dispensing Apparatus		
5. Name of your agent (if you have one)	Bailey Walsh & Co		
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)	5 York Place Leeds LS1 2SD		
Patents ADP number (if you know it)	224001	✓	
6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of filing (day / month / year)
7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day / month / year)	
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a) any applicant named in part 3 is not an inventor, or	Yes		
b) there is an inventor who is not named as an applicant, or			
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Description

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Claim(s)

Abstract

Drawing(s)

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Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

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11. I/We request the grant of a patent on the basis of this application.

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*A Tomkinson*

01.09.2003

12. Name and daytime telephone number of person to contact in the United Kingdom

A Tomkinson  
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## Dispensing Apparatus

This invention relates to dispensing apparatus, and particularly but not necessarily exclusively to dispensing apparatus for containing dispensing pre-determined quantities of medication therefrom

Dispensing apparatus which allows a pre-defined dose of a particular medication to be accessed by a user independently of other medication doses contained in the apparatus are known. This type of apparatus allows a user to easily take their medication without over or under dosing and, since the apparatus typically has a date, day or time associated with each dose, the user can clearly identify whether they have taken their medication for a particular time period, or not.

Dispensing apparatus typically falls into two categories; disposable dispensing apparatus and non-disposable dispensing apparatus. An example of a known disposable dispensing apparatus, such as the type used for the containment of medication such as aspirin, includes a plastic tray provided with a plurality of compartments, with a single tablet located in each compartment. A metal foil is heat sealed or adhered to an upper surface of the tray to cover the openings of the compartments. When a user requires access to a compartment to extract a pill therefrom, they simply depress the base of the compartment and push the pill through the foil. This apparatus allows a user to independently access each compartment but the apparatus is normally pre-formed by a manufacturer with the metal foil sealing the compartments, thus the dosage of medication in the compartments cannot be altered by a pharmacist or doctor. As such, this type of apparatus cannot be used to provide different users with different types of medication or different dosages of medication and is therefore of only limited use.

Dispensing apparatus which allows the dosage of medication contained therein to be changed by an administrator, such as a pharmacist or doctor is known but such apparatus is generally non-disposable. An example of dispensing apparatus of this type includes a substantially rigid box divided into a plurality of compartments arranged in a series of rows and columns. Each row and/or column is provided with closure means in the form of a slidable lid to allow access to be gained to each compartment. However, the slidable lid can be opened such that all the compartments within a row or column can be accessed at any one time, thereby allowing a user to easily over dose on medication. In addition, such apparatus is generally expensive to manufacture.

It is therefore an aim of the present invention to provide dispensing apparatus which is inexpensive to manufacturer and which allows a user to access a particular dose of medication independently of another medication dose contained therein.

It is a further aim of the present invention to provide dispensing apparatus which does not require an administrator, such as a pharmacist or doctor, to use adhesive, a heat sealing method and/or the like to seal compartments therein.

According to a first aspect of the present invention there is provided dispensing apparatus for dispensing medication therefrom, said dispensing apparatus including a container portion having one or more compartments therein for the containment of said medication, said compartments provided with sealing means for location over said compartments and wherein the sealing means is held in position over said compartments by a retaining portion having engagement means

thereon, said engagement means cooperating with complementary engagement means on said container portion.

Preferably the sealing means is in the form of a sheet like material or film, such as a metallic foil, board material, plastic sheet and/or the like. The sealing means is typically not provided with any adhesive thereon and is held in place by mutual engagement of the retaining portion and container portion engagement means.

In one embodiment at least a part of the sealing means is substantially transparent to allow a user to clearly see medication contained therein.

Preferably the sealing means is provided with perforation or frangible means thereon to allow a user to access a compartment by breaking and/or removing the sealing means. The perforation or frangible means are preferably substantially aligned with the openings of the compartments. Thus, access to one compartment can be gained independently of access to any other compartment.

Alternatively the sealing means can be formed from or have portions of material which can be easily broken/torn, such as paper.

Preferably the retaining portion is provided with a plurality of apertures therein and said apertures are substantially aligned with the openings of the compartments.

In one embodiment the retaining portion comprises a flat or sheet like material with apertures provided therein.

In one embodiment the retaining portion is detachably attached to the container portion. Alternatively, the retaining portion can be integrally formed or pivotally attached to the container portion. For example, the retaining portion can be hinged to the container portion if required.

Preferably the engagement means of the retaining portion and/or container portion include any or any combination of one or more clips, straps, protrusions/apertures, channels/flanges and/or the like.

In a preferred embodiment the engagement means of one of the retaining portion or container portion is in the form of one or more protrusions which engages with one or more complementary recesses or apertures on the other of said retaining portion or container portion.

Preferably engagement means are provided adjacent each compartment or opening on the container portion and/or retaining portion.

In one embodiment, engagement of the retaining portion with the container portion is irreversible when assembled, thereby providing a tamper evident container.

In one embodiment the container portion is in the form of a tray.

Preferably the apparatus is disposable.

Printed matter can be provided on any of the sealing means, retaining portion and/or container portion. This allows a user to be informed of the date, time, dose or type of medication and/or the like.

In one embodiment the sealing means can include a body portion with one or more panels joined thereto. The panels can be of any size and typically can be folded to lie over at least a part of the apparatus when assembled. This provides additional protection to prevent accidental puncturing of the sealing means.

According to a second aspect of the present invention there is provided a method of assembling dispensing apparatus, said method including the steps of locating one or more items into one or more compartments of a container portion, locating sealing means over the compartments and retaining the sealing means in position using a retaining portion, the retaining portion having engagement means which engage with complementary engagement means provided on the container portion.

The advantage of the present invention is that there is no requirement for sealing equipment to be used to achieve tamper evident storage of medication. The apparatus is also inexpensive to manufacture.

Embodiments of the present invention will now be described with reference to the accompanying figures, wherein:

Figure 1 is a perspective view of partially assembled dispensing apparatus according to one embodiment of the present invention;

Figure 2 is a plan view of the sealing means for assembly with the apparatus in figure 1;

Figure 3 is an enlarged cross sectional view of a compartment of the dispensing apparatus in figure 1 with the sealing means in figure 2 assembled therewith;

Figure 4 is a plan view of dispensing apparatus according to a further embodiment of the present invention;

Figure 5 is a perspective view of the dispensing apparatus in figure 3 when assembled; and

Figures 6a-6c show examples of possible forms of perforations for use with the present invention.

Referring firstly to figures 1-3 and 5, there is illustrated dispensing apparatus 2 in the form of a pill container including a retaining portion 4 hingedly connected to a container portion 6 along edge 8 by hinges 10. Hinges 10 are integrally formed with retaining portion 4 and container portion 6 in this example.

Container portion 6 is in the form of a tray and includes a plurality of compartments 12 therein for the containment of predefined dosages of pills. In this example the compartments are substantially square in shape and include a base 14, side walls 16 and an open top 18. However, it is noted that the compartments can be any required shape and can be of such dimensions to include a single pill 15 or a plurality of pills as required. The compartments 12 are provided at spaced apart locations in the tray and the openings of the compartments are defined in the upper panel surface 20 of the tray.

The retaining portion 4 is a planar member with a plurality of apertures 22 defined between upper and lower surfaces 24, 26 thereof respectively. Retaining portion 4 is movable between an open position shown in figure 1, wherein the lower surface 26 of the portion is a spaced distance apart from upper surface 20 of the container portion, and a closed position shown in figures 3 and 5, wherein the lower surface 26 of the retaining portion is

adjacent to and substantially parallel to upper surface 20 of container portion 6. In the closed position, apertures 22 are substantially aligned with the openings 18 of compartments 12 and retaining portion 4 has the same number of apertures as container portion 6.

Engagement means are provided on the retaining portion 4 in the form of a plurality of pegs 28 which protrude outwardly of the lower surface 26 of the retaining portion. The pegs 28 are complementary in shape to apertures 30 provided in upper surface 20 of the container portion 6 and are locatable therein when the retaining portion 4 is in the closed position. The walls 32 defining apertures 30 are typically provided with a converging taper away from upper surface 20 to provide a funnel like shape to allow easy location of a peg 28 therein. Each of pegs 28 can be provided with a flange portion 34 adjacent a free end thereof to allow the peg 28 to be snap fitted with the free end 36 of walls 32 defining the aperture 30. This engagement can be irreversible or the flange and/or walls 32 can be sufficiently flexible to allow releasable engagement thereof.

In use, a required number of pills 15 are located in each compartment 12 by a doctor or pharmacist. Sealing means in the form of a sheet member 38 is provided for location between the container portion 6 and retaining portion 4 when the apparatus is assembled. The sheet member 38 is held in place by the retaining portion 4, thereby removing the requirement for adhesive or other sealing steps to be undertaken by the pharmacist or medical person.

The sheet member 38 is typically formed from thin card but can be formed from any foil or plastic film like material. A plurality of apertures 40 are formed in member 38 which are align with apertures 30 on container portion 6, when assembled thereby

allowing pegs 28 of retaining portion 4 to pass therethrough when the retaining portion is moved to a closed position. A plurality of perforations 42 are formed in member 38 and have substantially the same dimensions as the openings 18 of compartments 12. As such, when a user wishes to access the medication contained in a particular compartment 12 of the assembled apparatus, they break the perforation portion corresponding to a compartment and retrieve the dose of pills therefrom.

Referring to figures 6a-6c, there are illustrated some examples of the perforation portions that could be used for allowing a user to gain access to compartments 12. In figure 6a, the perforations 42 are of substantially similar dimensions to the dimensions of opening 18. In figure 6b, the perforations 42' converge from the corners of opening 18 to a substantially central line. In figure 6c, perforations 42'' form a line passing between opposite edges corresponding to side walls of the opening.

Printed matter 44 can be provided on at least the upper surface 46 of the sheet member 38 to inform the user of the required dosage, dates and/or times at which the medication is to be taken, the name of the medication and/or other useful information. In addition, the sheet member 38 can be provided with additional panels 48, 50 on either end thereof which can provide additional medication information thereon if required. The additional panels 48, 50 are typically defined in sheet member 38 along fold lines 52, 54 respectively. Panels 48, 50 can be folded over retaining portion 4 when in a closed position, as shown in figure 5, thereby preventing accidental breaking of the sealing means.

Whilst figures 1-3 and 5 show a dispensing apparatus including two columns of medication corresponding to a dual dosage

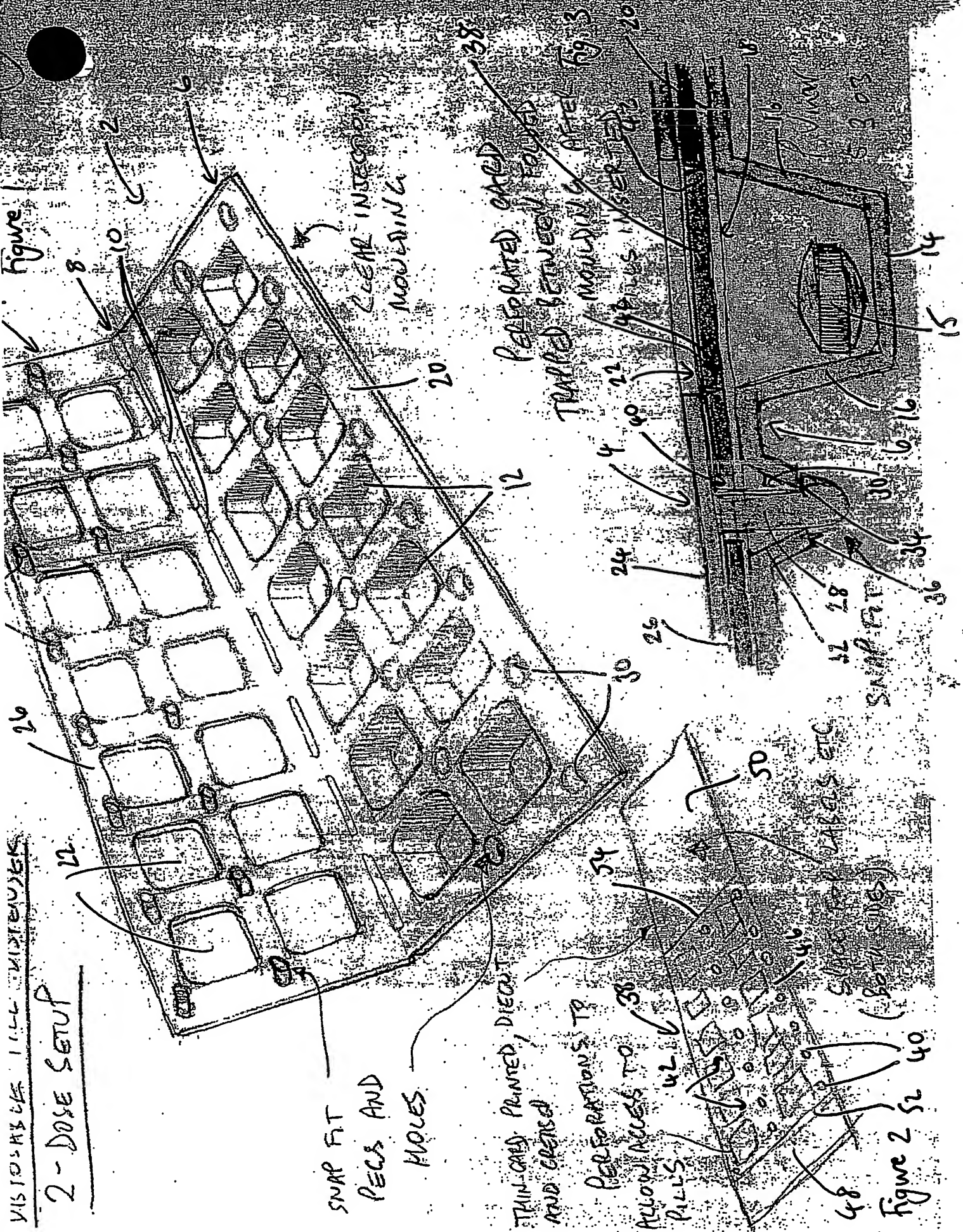
system, further columns or rows of compartments can be provided depending on the required dosage required. For example, in figure 4 a four dose dispensing apparatus is illustrated.

The dispensing apparatus can be provided in any required shape or colour and can be made from any required material. However, in a preferred embodiment the apparatus is formed by injection moulding from a plastic material.

VISIBILITY 100% VISIBILITY

## 2-DOSE SETUP

Figure 1



DISPOSABLE PILL DISPENSER

A-DOSE  
SYSTEM

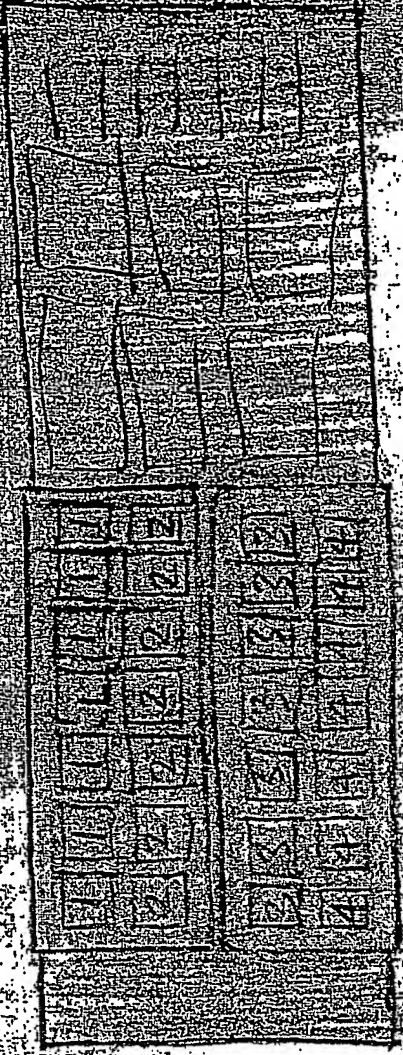
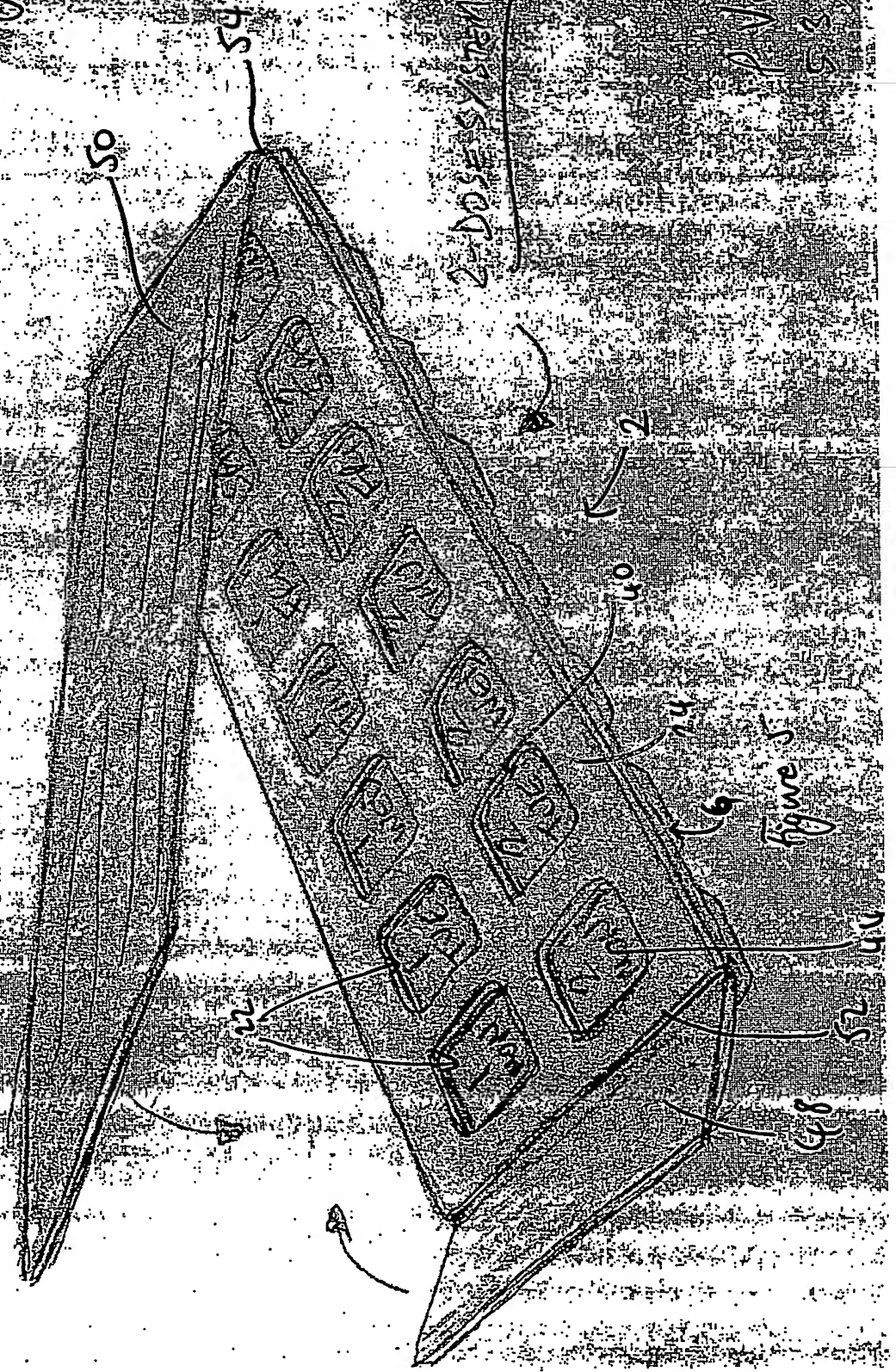


Figure 4



2-DOSE SYSTEM

Figure 5

3-DOSE

POSSIBLE FORMS OF PERFORATION

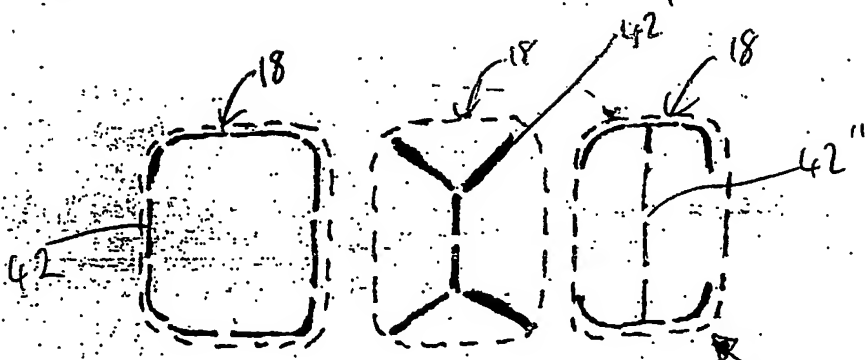


Fig. 6a

Fig. 6b

Fig. 6c

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